OS#3022

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

2003 MAR 27 P

BALLOT VOTE SHEET

DATE: MAR 27 2003

TO: The Commission
Todd A. Stevenson, Secretary

FROM: W.H. DuRoss, III, General Counsel
Stephen Lemberg, Assistant General Counsel for Administrative Law
Lowell F. Martin, Attorney, GCAL (ext. 7628)

SUBJECT: Final Rules to Declare Lead-Cored Candlewicks and Candles with Such Wicks to be "Hazardous Substances" and to Ban Them

BALLOT VOTE DUE APR 1 2003

The attached staff briefing package recommends that the Commission issue final rules to declare lead-cored candle wicks and candles with lead-cored wicks to be hazardous substances and to ban them. The draft rules appear as TAB D to the briefing package. For purposes of the rules, lead-cored candlewicks are defined as those with a lead content of more than 0.06 percent of the total weight of the metal core of the wick. This is consistent with the advance notice of proposed rulemaking (ANPR) issued by the Commission in response to Petition No. HP 00-03 on February 20, 2001 (66 FR 10863) and the notice of proposed rulemaking (NPR) issued in this proceeding by the Commission on April 24, 2002. 67 FR 20062.

Please indicate your vote on the following options:

I. ISSUE THE RULES AS DRAFTED.

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(Signature) (Date)

II. ISSUE THE RULES WITH THE FOLLOWING CHANGES (PLEASE SPECIFY).

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_____ _____
(Signature) (Date)

III. DO NOT ISSUE THE RULES.

_____ _____
(Signature) (Date)

IV. TAKE OTHER ACTION (PLEASE SPECIFY).

_____

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_____

_____ _____
(Signature) (Date)

Attachment:

Staff briefing package

OS#3022

Briefing Package for Ban of Candles with Lead-containing Wicks and Wicks for Candle-making that Contain Lead Final Rule

For Information Contact:

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NOTE: This document has not been reviewed or accepted by the Commission.
Initial rch Date 5/27/03

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Executive Summary

A Notice of Proposed Rulemaking (NPR), published in the Federal Register on April 24, 2002, (67 FR 20062) requested comments on a rulemaking proceeding that could result in a mandatory rule addressing the use of lead in candlewicks.

Six written comments were received in response to the NPR. All six commenters supported regulating the lead content of candlewicks. One commenter expressed interest in allowing the use of lead-cored candlewicks in certain circumstances. Comments from the candle industry clearly stated that they strongly support a mandatory standard, although they did not support the specific record-keeping and certification requirements of the proposed rule. After further analysis of the complex manufacturing processes described by the commenters, in combination with the limited benefits expected from the requirements, the staff is no longer recommending that the Commission require record-keeping and tracking at this time.

The final regulatory analysis indicates that the costs of the ban to businesses, including small businesses, are likely to be small because the costs of replacing lead-cored candlewicks with non-leaded wicks are expected to be negligible. The costs of labeling shipping cartons will be small. The benefits, while also small because few lead-cored candlewicks are currently produced and/or sold in the U.S., may include positive health benefits in some individual cases and may contribute to the gradual reduction in lead exposure.

On the basis of previous staff findings, additional information developed by the staff, and comments received in response to the NPR, the staff concludes that: 1) lead exposure from burning candles with metal-cored wicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks presents a risk of lead poisoning under certain conditions of use; 2) no suitable voluntary standard currently exists and past experience indicates that voluntary industry agreements to discontinue the use of lead in candlewicks are unlikely to be effective over time; 3) substitutes for lead-cored wicks are available and currently in use; and 4) the costs of a ban to the industry would be small. In addition, the candle industry supports a ban on lead-cored wicks.

Therefore, the staff recommends that the Commission proceed with rulemaking under the Federal Hazardous Substances Act and issue a final rule determining that metal-cored candlewicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks are "hazardous substances" and banning such candlewicks and candles with such wicks. The staff also recommends that the Commission require that shipping cartons of metal-cored candlewicks that comply with the regulation and candles containing such wicks be labeled as complying with the regulation.

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: MAR 27 2003

TO : The Commission
Todd A. Stevenson, Secretary

THROUGH: W. H. DuRoss, III, General Counsel
THROUGH: Patricia Semple, Executive Director

FROM : Jacqueline Elder, Acting Assistant Executive Director, Office of Hazard Identification and Reduction
Kristina M. Hatlelid, Ph.D., M.P.H., Toxicologist, Directorate for Health Sciences

SUBJECT : Proposal to Ban Lead-cored Candlewicks

This briefing package summarizes the previous staff analysis of the available data on lead-cored candlewicks, provides additional data to support the proposed final rule, provides a summary of comments received in response to the notice of proposed rulemaking (NPR) (67 FR 20062) and the staff responses to the comments, and provides a draft final rule for consideration by the Commission.

Background

Petition HP 00-3

On February 24, 2000, the U.S. Consumer Product Safety Commission (CPSC) received a request from Public Citizen that the Commission ban candles with lead-containing wicks and wicks for candle-making that contain lead. On February 29, 2000, CPSC received a similar request from the National Apartment Association and the National Multi Housing Council. These requests were docketed collectively under the Federal Hazardous Substances Act (FHSA) as Petition No. HP 00-3 on March 17, 2000.

A number of different materials are used to make candlewicks. Some wicks have a metal wire in the center of the wick that provides structural rigidity to the wick to keep it straight and upright during candle production and burning. The metal is most often zinc, but tin and lead can also be used.

After an analysis of the available data on lead-cored candlewicks and the information provided by the petitioners, the staff transmitted a briefing package to the Commission recommending that the Commission grant the petition and initiate rulemaking that could result in a ban of lead-cored candlewicks and candles with such wicks. The staff concluded that consumers cannot determine the presence of lead in a candlewick by visual inspection. The presence of lead in a wick can be determined only by laboratory analysis. Similarly, consumers cannot tell if lead is being released from a burning candle by observing smoke or soot. Consumers cannot tell that lead is not being released by the lack of visible emissions.

NOTE: This document has not been reviewed or accepted by the Commission. Initial rlh Date 3/27/03

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Determination of lead in room air or on surfaces must be done by professionals using appropriate analytical methods.

Laboratory test data from CPSC and others[1] showed that the amount of lead released into the air during burning of lead-cored wick candles varied greatly among the tested candles. This was true even among samples of several identical candles. The reasons for this variability are not known. Thus, it is not possible to predict whether a lead-containing candlewick will emit small amounts or relatively large amounts of lead during burning. Laboratory test data indicate that burning candles with metal-cored wicks with lead concentrations of 0.06 percent or less by weight do not result in detectable emissions of lead into the air. In contrast, tests indicate that although lead emissions from metal-cored wicks containing more than 0.06 percent lead by weight are unpredictable, some would present a risk to consumers from excessive exposure to emitted lead. Based on these results and since metals commonly contain traces of lead, for the purposes of this discussion, a lead-cored wick is a wick containing a metal core consisting of lead or lead alloy with greater than 0.06 percent lead by weight in the metal.

In February 2001, the Commission voted to grant the petition and commence a rulemaking addressing metal-cored wicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks by issuing an advance notice of proposed rulemaking (ANPR). 66 FR 10863 (February 20, 2001). The ANPR was followed by a notice of proposed rulemaking (NPR) that included proposed requirements for certification, record-keeping, labeling, and tracking of metal-cored candlewicks and candles containing metal-cored wicks that comply with the ban. 67 FR 20062 (April 24, 2002).

International Activities

Several countries have acted on this issue. Officials in Canada issued an advisory in January 2001, warning consumers that some candles sold in Canada contained lead-cored wicks[2]. Officials in Australia[3] and New Zealand[4] instituted provisional bans of candles with wicks containing any amount of lead as early as 1999, and Australia recently announced a permanent ban on the sale of candles with wicks containing more than 0.06 percent lead[5]. This regulation is similar to the staff proposal in that it also regulates metal-cored candlewicks that contain greater than 0.06 percent lead.

Denmark issued a comprehensive order in November 2000 banning a number of products containing lead[6]. Chafing dish candles and other candles are specifically included in the ban. The order defines a lead-containing product as one in which lead represents more than 100 mg/kg (0.01 percent) of the homogeneous components. The goal of this regulation appears to be to

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[1] Memorandum from W.K. Porter, "Summary of Candle Emissions Studies," March 8, 2001; Tab A in Briefing Package on Proposed FHSA Rules to Ban Lead-Cored Candle Wicks and Candles with Lead-Cored Wicks, March 18, 2002.

[2] Health Canada Advisory 2001-02, January 2001.

[3] Commonwealth of Australia Consumer Protection Notice No. 11 of 1999 under the Trade Practices Act 1974, September 1999.

[4] New Zealand Ministry of Consumer Affairs Unsafe Goods Notice under the Fair Trading Act 1986, June 2000.

[5] Press release No. 057. Senator Ian Campbell, Parliamentary Secretary to the Treasury. Commonwealth of Australia. November 1, 2002.

[6] Statutory Order No. 1012 of November 13, 2000, on Prohibition of Import and Marketing of Products Containing Lead. Ministry of Environment and Energy. Danish Environmental Protection Agency.

minimize the use of lead in certain products while recognizing that trace amounts of lead can be found in some metals.

Hazard

The toxic effects of lead and the risk to consumers, especially children, from exposure to lead emitted from lead-cored wick candles were detailed in the briefing package for Petition No. HP 00-3, Request to Ban Candles with Lead-containing Wicks and Wicks Sold for Candle-making that Contain Lead (December 12, 2000). Briefly, while excess lead exposure can cause adverse health effects in adults, children are particularly susceptible to the toxic effects of lead. The scientific community generally recognizes a level of 10 micrograms of lead per deciliter of blood (10 µg/dL) as a threshold level of concern with respect to lead poisoning in children. The adverse health effects of lead poisoning in children are well-documented and may have long-lasting or permanent consequences. These effects include neurological damage, delayed mental and physical development, attention and learning deficiencies, and hearing problems. Because lead accumulates in the body, exposures to even small amounts of lead can contribute to the overall level of lead in the blood and to the subsequent risk of adverse health effects.

As a lead-cored wick candle burns, some of the lead vaporizes and is released into the air. Some of the emitted lead may deposit from the air onto the floor and other surfaces in the room. Children may be exposed to the airborne lead by inhaling it. They may also be exposed to the lead that deposits from the air onto surfaces in the room through direct mouthing of contaminated objects and other surfaces or from handling such objects and surfaces and subsequent hand-to-mouth activity.

The staff risk assessment in the December 2000 briefing package[7] indicated that candles that emit greater than about 430 µg of lead into the air per hour of candle burning would result in excessive lead exposure in children. Since laboratory investigations by CPSC staff and others indicate that candles with wicks containing lead or lead alloys can emit more than 3,000 µg of lead per hour during candle burning[8], the staff believes that under certain conditions of use, the lead emitted from burning candles with such lead-cored wicks may cause substantial illness or injury to children from exposure through inhalation of airborne lead. Children may also be exposed to lead that deposits onto surfaces in the room, which would also contribute to the overall level of lead in the blood and to the subsequent risk of adverse health effects.

Requirements under the FHSA

Section 2(f)(1)(A) of the FHSA defines a hazardous substance as, among other things, "any substance or mixture of substances which is toxic," if the substance "may cause substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children." 15 U.S.C. § 1261(f)(1)(A). To avoid or resolve uncertainty, section 3(a) of the FHSA allows the Commission to declare a substance to be a "hazardous substance" by regulation. 15 U.S.C. § 1262(a). Under section 2(q)(1)(B) of the FHSA, the Commission can by rule ban a household product that is a hazardous

[7] Memorandum from K.M. Hatlelid, "Review of Lead Emissions from Candles," November 15, 2000; Tab B in Briefing Package on Petition No. HP 00-3, December 12, 2000.

[8] Memorandum from B.K. Jain, "Evaluation of Lead and Zinc Emissions from Candles," December 19, 2000; and Memorandum from W.K. Porter, "Summary of Candle Emissions Studies," March 8, 2001; Tab A in Briefing Package on Proposed FHSA Rules to Ban Lead-Cored Candle Wicks and Candles with Lead-Cored Wicks, March 18, 2002.

substance if the Commission finds that, in spite of any cautionary labeling, the product presents a hazard such that protection of public health and safety can be adequately served only by keeping the product out of the channels of interstate commerce. 15 U.S.C. § 1261(q)(1)(B).

In light of the results of the CPSC laboratory investigations, the staff concludes that metal-cored candlewicks containing greater than 0.06 percent lead by weight in the metal and candles with such wicks should be considered hazardous substances under the FHSA and recommends that the Commission make such a declaration under its FHSA section 3(a) authority. A CPSC Human Factors staff analysis concluded that cautionary labeling would be ineffective in preventing lead emissions because the only precaution that could be taken to avoid the hazard would be to not burn the candle. This would negate the primary intended purpose of the product[9]. The staff, therefore, recommends that the Commission issue a rule to ban lead-cored candlewicks and candles with such wicks.

Market Information

The staff evaluated available information on the candle and candlewick markets. This information is discussed below and detailed at Tab A.

Trade Associations

The major trade association that represents candle and wick manufacturers and suppliers is the National Candle Association (NCA). NCA members include about 74 candle manufacturers, ten of which are foreign. NCA states that its members produce about 90 percent of the candles made in the U.S. Another U.S.-based organization, comprised of craftspersons, is The International Guild of Candle Artisans, with 800 members from around the world.

Candle Information

Based on current industry information, there are nearly 500 candle manufacturers in the U.S. Of the 483 firms identified as candle manufacturers by ReferenceUSA, all but three firms had fewer than 500 employees and 293 (or 60 percent) had fewer than five employees.

In 2000, the latest year that factory shipment data are available, U.S. domestic candle shipments totaled approximately $1.5 billion. Imports amounted to $504 million in 2000, with candles from the Far East accounting for almost half of the imports. U.S. exports of candles amounted to about $60.5 million in 2001. The apparent U.S. consumption of candles in 2000 (domestic shipments plus imports, minus exports) was about $2.0 billion.

Retail prices of candles range from about 10 cents for a small tealight candle up to $75.00 for large columnar candles[10].

There are limited data available concerning use of candles in homes. According to the NCA, candles are used in 70 percent of U.S. households. They are burned one to three times a week by the majority of candle consumers. Half of the consumers burn one or two candles at a time.

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[9] Memorandum from C. Meiers, "Labeling of Candles with Lead-cored Wicks (Petition HP 00-3)," October 18, 2000; Tab C in Briefing Package on Petition No. HP 00-3, December 12, 2000.

[10] For detailed discussion of candle types, see Tab A.

Candlewick Information

There are three general types of candlewicks. Flat braided wicks, used in taper candles, make up about 50 percent of U.S. wick production. Square wicks, representing less than 10 percent of U.S. production, are used in production of beeswax candles and candles that develop small wax pools when burning. Cored wicks, which account for about 40 percent of wicks used in candles, are rigid and have a central core made of cotton, paper, hemp, metal, or polypropylene, surrounded by wicking material made of paper or fiber. The cores provide rigidity to wicks in candles that produce deep pools of molten wax, and are frequently used in votives, pillars, tealights, and other container candles.

We have identified three domestic producers of candlewicks. The leading producer accounts for the majority of wicks used by the U.S. candle industry. In addition, there may be several small specialty producers of wicks.

Candlewick manufacturers sell their wicks to wholesalers (candle material suppliers) or large candle manufacturers. Some wholesale wick suppliers repackage wicks supplied by large producers. The ReferenceUSA database lists 55 wholesale suppliers of candle making materials. Small candle producers usually purchase wick material from wholesale firms.

Small quantities of candlewicks may be purchased by consumers at craft stores. They may be purchased in large quantities from wholesale firms or direct from manufacturers. Wicks are available on reels or precut to desired lengths. Prices vary depending upon how the wick is supplied and the quantities ordered. For example, based on one manufacturer's list prices, pre-waxed wicks on reels were 12 cents per yard and pre-waxed, pre-cut, 2-inch wicks were 37 cents per yard. For this manufacturer, price did not depend on wick type.

No specific information is available for domestic shipments or sales of candlewicks. However, based on information provided by the leading domestic candlewick manufacturer in its comments to the NPR, the staff estimates that total domestic sales of candlewicks could be about $4 to $5 million annually. Data on international trade of wicks does not distinguish candlewicks from other types of wicks (*e.g.*, wicks for stoves, lighters, and lamps). Still, imports of all types of wicks, including candlewicks, were about $4.1 million in 2001.

Prior to the granting of the petition, candlewicks with some levels of detectable lead were found in the marketplace. In a non-statistical survey of candles for sale in the Washington, D.C. area in 1999, the petitioners found that about 30 percent of candles for sale had metal-cored wicks, and about 10 percent of these (or three percent of all candles sampled) had detectable levels (*i.e.*, at least trace levels) of lead in the wick.

According to the NCA, "use of lead cored wicks among U.S. manufacturers is negligible." Practically all metal-cored wicks currently produced in the U.S. are made of zinc. According to the NCA, zinc-cored wicks account for about 15 to 20 percent of U.S. production. Zinc-cored wicks have trace amounts of lead, about 0.01 percent, substantially less than the lead limit in the proposed standard.

Public Comments

CPSC received six comments in response to the Notice of Proposed Rulemaking (NPR) (67 FR 20062; April 24, 2002). All six commenters were in favor of the proposal to ban lead-cored wicks. One commenter expressed interest in allowing the use of lead-cored candlewicks in certain circumstances (CH02-2-6).

One wick manufacturer [Atkins and Pearce (CH02-2-4)] and two industry groups [Consumer Specialty Products Association (CH02-2-2); National Candle Association (CH02-2-3)] provided comments. One commenter represented a non-profit information and advocacy group in Australia [Global Lead Advice and Support Service (CH02-2-5)]. Two commenters were individual consumers or interested parties (CH02-2-1; CH02-2-6). The index of the public comments on the NPR is in Tab B.

Issue: A federal regulation is needed to ban the use of lead in candles.

All six commenters support the concept of regulating the use of lead in metal-cored candlewicks, although there was disagreement about the scope of the proposed regulation, and the proposed requirements for testing, certifying, and tracking metal-cored wicks.

Staff Response:

The staff acknowledges the interest among consumers, industry, and advocacy groups in the elimination of candlewicks as a source of lead exposure. The staff addresses specific questions and comments about the proposed rule below.

Issue: The proposed record-keeping requirements for metal-cored candlewicks would be too burdensome, especially for smaller companies.

The rule as proposed in the NPR (67 FR 20062) included requirements that shipping cartons of metal-cored candlewicks and shipping cartons of candles with such wicks be labeled as complying with the ban and with a lot number or other designation, and that wick and candle manufacturers, importers, and distributors maintain records documenting compliance for each lot with the ban. Representatives from industry (CH02-2-2, CH02-2-3, CH02-2-4) expressed concern about the costs and labor that would be involved in the tracking of metal-cored wicks used in specific candles, and the maintenance of records.

These commenters provided some information about the candle-making process to illustrate potential difficulties with the proposed requirements. For example, the commenters described machines that rapidly produce many candles at once, simultaneously drawing candlewick from several different spools. Consequently, a batch of finished candles may contain wicks from different lots or sources. Further, these candles with different wicks would be indistinguishable and would be packaged together at the end of production. Thus, a single shipping carton could contain identical candles with different lots of metal-cored candlewicks. The commenters believe it would be labor intensive and costly to change the current method of production so that individual lots of wicks could be separated and tracked. While not providing alternative estimates of costs, the commenters indicated that the staff may have underestimated the costs of the labeling and record-keeping requirements.

Staff Response:

After further analysis of the complex manufacturing processes described by the commenters and the limited benefits expected, the staff is no longer recommending that the Commission require record-keeping and tracking at this time.

Issue: Record-keeping and tracking of metal-cored candlewicks could be accomplished by incorporating an identifier into candlewicks as they are produced.

One commenter, a US wick manufacturer (CH02-2-4), suggested that tracking could be done in ways other than labeling shipping cartons with a lot number or other identifier. For

example, if the wicks in specific lots, made with specific lots of metal-core material (*e.g.*, zinc wire), could be visually distinguished from each other, manufacturers could track candlewick lots without changing current manufacturing processes. One way to distinguish wick lots would be to incorporate unique colors and patterns into the wick braid. Thus, inspecting the wicks in candles from a specified manufacturer would provide visual information about the wick lot. Multiple wick lots could be used at the same time in candle production, and multiple wick lots could end up in the same shipping carton, without losing the ability to obtain records for specific candles or track specific lots of metal-cored wicks. However, additional information provided by this commenter indicates that the use of color-coded tracer threads in the candlewick could result in increased costs associated with testing the performance of the new candlewicks before they could be used in candle production.

Staff Response:

While the alternative proposed by this commenter may provide a level of traceability to candlewicks that does not currently exist, the staff is not recommending that the Commission require record-keeping and tracking at this time.

Issue: The effective date of the rule should be based on the date of sale rather than the date of manufacture or import.

One commenter (CH02-2-2) believes that non-complying products should not benefit from an extended sell-through period.

Staff Response:

The staff has no reason to believe that manufacturers, importers, or retailers have, or will, warehouse or stockpile candles made prior to the effective date that would not conform to the rule. Similarly, the staff has no information that suggests that manufacturers, importers, or retailers will stockpile non-complying candlewicks for the purposes of producing candles between the publishing of the final rule and the effective date 180 days later. Moreover, non-complying candlewick inventory would not be usable after the effective date. The 180-day effective date provides time for manufacturers, distributors, and importers to make the necessary changes to bring their products and shipping containers into compliance with the regulation. The staff maintains that this effective date is appropriate for these products.

Issue: Lead-cored candlewicks are superior for some uses. The regulation should allow an exemption for the use of lead-cored candlewicks in certain circumstances.

One commenter (CH02-2-6) claimed that candles with lead-cored wicks performed better than candles with other kinds of wicks in a specific application (camping lanterns), and suggested that an exemption be made to allow specific uses of lead-cored candlewicks in candles.

Staff Response:

Based on additional information provided by this commenter, the staff believes that the candlewicks in question did not actually contain lead-cored wicks. A firm that wishes to manufacture, distribute, or import metal-cored candlewicks containing greater than 0.06 percent lead could petition the Commission for an exemption or modification to the ban under the Commission's petitioning regulations at 16 CFR Part 1051.

Issue: All metals should be banned for use in candlewicks.

One commenter (CH02-2-5), representing a non-profit information and advocacy group in Australia, suggested that all metal-cored wicks should be banned for use in candles to avoid any confusion about whether the metal contains unacceptable levels of lead.

Staff Response:

As discussed in the previous briefing package, laboratory test data showed that burning candles with metal-cored wicks with lead concentrations of 0.06 percent or less by weight did not result in detectable emissions of lead into the air[11]. Therefore, there is no basis for declaring all metal-cored candlewicks and candles with such wicks to be "hazardous substances."

Current Staff Proposal

The staff proposes that the Commission regulate lead-containing metal-cored candlewicks by 1) declaring metal-cored candlewicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks to be "hazardous substances," and 2) by banning such candlewicks and candles.

The staff also recommends that the Commission require that shipping cartons of metal-cored candlewicks that comply with the regulation and candles containing such wicks be labeled as complying with the ban. The label would read, "Conforms to 16 CFR 1500.17(a)(13)." This labeling requirement would serve to provide information to the Commission staff and to candle manufacturers, candle and wick distributors, and retailers that the candlewicks comply with the regulation.

The Commission has previously issued guidance to firms concerning products that may contain lead. This guidance was codified in 1998 as "Guidance for lead (Pb) in consumer products" at 16 CFR § 1500.230. Consistent with this policy, domestic producers, distributors, private labelers, importers, and retailers of metal-cored candlewicks and candles with such wicks may wish to test products to ensure compliance with the ban. Alternatively, firms may wish to obtain assurances from suppliers that the lead content of the metal does not exceed 0.06 percent by weight.

Regulatory Analysis

Under section 3(i)(1) of the FHSA, when the Commission issues a regulation under section 2(q)(1)(B) banning a hazardous substance, it must also issue a final regulatory analysis describing potential benefits and costs of the regulation, alternatives to the final regulation that were considered, and any significant issues raised during the public comment period on the preliminary regulatory analysis issued with the proposed regulation and how those issues were resolved. 15 U.S.C. § 1262(i)(1). In addition, the Commission must publish in the final regulation findings that the benefits expected from the regulation bear a reasonable relationship to its costs and that the regulation imposes the least burdensome requirement which prevents or adequately reduces the risk of injury for which the regulation is being issued. 15 U.S.C.§ 1262(i)(2). The following discussion addresses these issues. A detailed analysis is at Tab A.

[11] Briefing memorandum from K.M. Hatlelid, "Proposal to Ban Lead-cored Candlewicks," March 18, 2002.

Benefits of the Rule

While the benefits to consumers of eliminating lead-cored candlewicks as a source of lead exposure are not quantifiable, they are likely to be small since few lead-cored candlewicks are now produced and/or sold in the U.S. The likely benefits are dependent on individual circumstances of candle use. Laboratory studies indicate that under certain conditions of use exposure to airborne lead from burning candles with lead-cored wicks presents a risk of lead poisoning. Therefore, a ban may result in positive health benefits in individual cases.

In the mid-1970s, the Commission chose to defer to the industry's voluntary agreement to eliminate lead from candlewicks. Since this agreement did not prevent companies from returning to the use of lead-cored wicks in the 1980s and 1990s, a ban of the use of lead in candlewicks will therefore help ensure that lead will not be used in candlewicks in the future.

Costs of the Rule

The costs of replacing lead-cored candlewicks with non-leaded wicks are expected to be negligible. The current use of lead in wicks is already small, since none of the NCA members use lead in their wicks beyond the acceptable trace levels found in zinc cores, and information obtained from an industry source indicates that the costs of substitutes for lead-cored wicks are not higher than costs of wicks made with lead.

There may be costs associated with labeling and ensuring conformance. Shipping carton labeling may be done by direct printing onto the carton or by affixing a pre-printed label, such as a sticker. On a per carton basis, direct printing is expected to be less costly than the use of a sticker. Labeling machines may cost as much as $15,000 and individual labels may cost 5 to 10 cents each. Assuming that 15-20 percent of all candles produced would be affected, and that each shipping carton holds 144 candles, valued at $1 each, perhaps 2 to 3 million shipping cartons would require labeling annually. If labels cost 5 to 10 cents each, then annual costs would be about $100,000 to $300,000. The costs to candlewick manufacturers to label shipments of metal-cored candlewicks, expected to be substantially less than that of candles, are estimated to be about $80 to $320 per year.

Consistent with the Commission's lead in consumer products guidance policy at 16 CFR § 1500.230, domestic producers, distributors, private labelers, importers, and retailers of metal-cored candlewicks and candles with such wicks may wish to test products to ensure compliance with the regulation. Alternatively, firms may wish to obtain assurances from suppliers that the lead content of the metal does not exceed 0.06 percent by weight. This should be relatively straightforward because candlewick manufacturers generally receive chemical analyses from the suppliers of the metal used in their candlewick production.

Finally, there may be costs associated with inventories of non-complying candlewicks held by manufacturers. The rule would apply to candlewicks or candles manufactured after the rule's effective date. Therefore, non-complying candlewicks would have to be scrapped under the regulation since they would no longer be usable in candle manufacturing. It is not anticipated, however, that a large amount of candlewick inventory would be affected.

In summary, while the benefits of a ban of lead in candlewicks are likely to be small, the costs of the ban to the industry are also small. The action will contribute to the gradual reduction in lead exposure in the U.S. population.

Alternatives Considered

No Action

If the Commission decides to take no action, lead-cored candlewicks could be sold in the U.S. In the mid-1970's the domestic candle industry stopped using lead in wicks, but lead-cored wicks reappeared on the domestic market some time afterward, and imports may continue to be a source of lead in the absence of a mandatory standard. The staff would then have to take action on lead-containing wicks on a case by case basis under the FHSA.

Voluntary Standards

In May 2000, a task group was formed under the ASTM F15.45 Candle Products subcommittee to develop a standard to address the lead content of lead in candlewicks. The task group stopped their standards development process in February 2001 in favor of supporting the CPSC rulemaking process.

Voices of Safety International (VOSI) proffered a voluntary standard for lead in candlewicks during the public comment period on the ANPR[12]. This standard specified that metal-cored wicks may contain no more than 0.01 percent lead in the metal, and further specified that imported candlewicks may not contain metal cores. The standard included a methodology, based on tensile strength of metals, for determining whether metal-cored wicks comply with the specified maximum lead content.

The staff concluded in the previous briefing package that there were several deficiencies with the submitted standard, principally, that the analytical methodology was not capable of reliably determining either the presence or concentration of lead in metal-cored candlewicks. The staff also concluded that VOSI did not demonstrate that the standard was developed within a consensus framework or is otherwise widely known to candle and wick manufacturers in the U.S. or overseas. Thus, the staff analysis showed that the VOSI standard was technically unsound and that substantial compliance would be unlikely.

Therefore, the staff concludes that no suitable voluntary standard currently exists.

A Ban without Labeling of Shipping Containers

The Commission could decide to promulgate regulations declaring metal-cored candlewicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks to be hazardous substances and banning them without requiring conformance statements on shipping cartons of candlewicks and candles. This alternative would eliminate the minor costs associated with labeling, but it could make it more difficult for distributors and retailers to assure that the merchandise is compliant with the regulation. It could also make enforcing the ban more resource-intensive for the Commission.

Precautionary Labeling

A CPSC Human Factors staff analysis concluded that cautionary labeling is not an acceptable strategy for protecting vulnerable populations from lead poisoning that may be caused

[12] Refer to Tabs C and D in Briefing Package on Proposed FHSA Rules to Ban Lead-Cored Candle Wicks and Candles with Lead-Cored Wicks, March 18, 2002.

by burning candles with lead-cored wicks[13]. The analysis showed that cautionary labeling under the FHSA would be ineffective since the only precaution that could be taken to eliminate the hazard is to not burn the candles, which is the intended use of the product. In addition, if labels were affixed to the immediate candle packaging or wrapping, the label would no longer be present once the candles are removed from the packaging.

Effective Date

The final rule's effective date is proposed to be 180 days after publication in the Federal Register. It would apply to candles and candlewicks with metal cores imported or manufactured on or after the effective date. It provides time for manufacturers, distributors, and importers to make the necessary changes to bring their products into compliance with the regulation. This would involve procurement of complying products, including labels and/or labeled containers and/or the implementation of a labeling system for shipping containers. The 180-day time lag also allows for depletion of any non-complying candlewick inventory.

Final Regulatory Flexibility and Environmental Analyses

Based on comments received in response to the NPR concerning the costs of the original proposal, in combination with the limited benefits, the staff supports the elimination of recordkeeping and tracking requirements at this time. Therefore, in its currently drafted form, the regulation is not expected to have a significant adverse impact on a substantial number of small businesses. Although most firms affected by the rule are small, costs of complying with this rule are expected to be small. Firms affected by the rule include candlewick producers, wholesalers, and importers, and candle manufacturers, wholesalers, and importers.

The transition to complying metal-cored candlewicks is not expected to have an adverse environmental impact, especially if the effective date enables firms to substantially deplete any existing non-complying candlewick inventory. No comments were received in response to the NPR concerning any adverse environmental impact. U.S. wick manufacturers have stopped producing metal-cored wicks with more than 0.06 percent lead by weight in the metal, and a large portion of the U.S. candle-manufacturing sector has discontinued using lead-cored wick in their candles. It is not expected that a substantial amount of non-complying inventory will remain as of the effective date of the rule. Therefore, the environmental consequences are expected to be insignificant.

Options

The following options are available to the Commission:

1. Vote to amend the FHSA regulations to declare metal-cored candlewicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks to be hazardous substances, to ban such candlewicks and candles, and to require labeling of shipping cartons containing candlewicks and candles that comply with the regulation.

2. Vote to amend as per option 1, but do not require labeling of shipping cartons.

3. Do not amend the regulations.

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[13] Memorandum from C. Meiers, "Labeling of Candles with Lead-cored Wicks (Petition HP 00-3)," October 18, 2000; Tab C in Briefing Package on Petition No. HP 00-3, December 12, 2000.

Conclusions and Recommendation

The staff recommends that the Commission issue a final rule that declares metal-cored candlewicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks to be hazardous substances, to ban such candlewicks and candles, and to require shipping cartons of all metal-cored candlewicks that comply with the regulation and candles containing such wicks to be labeled as complying with the regulation.

The comments provided in response to the NPR emphasized that lead should not be used in candlewicks. Comments from industry clearly state that they strongly support a ban on lead-cored wicks, but they disagreed with the proposed record-keeping and certification requirements and indicated that the staff's estimate of labeling and record-keeping costs may have been understated.

Based in part on information provided by the commenters, in combination with the limited expected benefits, the staff reconsidered these proposed record-keeping and certification requirements, and now recommends that the Commission not promulgate record-keeping and additional certification requirements at this time.

The Commission has previously issued guidance to firms concerning products that may contain lead. This guidance was codified in 1998 as "Guidance for lead (Pb) in consumer products" at 16 CFR § 1500.230. Consistent with this policy, domestic producers, distributors, private labelers, importers, and retailers of metal-cored candlewicks and candles with such wicks may wish to obtain assurances from suppliers that the lead content of the metal does not exceed 0.06 percent by weight, or to test products themselves. Such steps would serve to ensure compliance with the new regulation.

The final regulatory analysis indicates that the environmental consequences of the regulation are expected to be insignificant, and that the costs of the regulation to businesses, including small business, are likely to be small and the benefits, while small, will be positive. The staff believes that the available information is adequate to support a finding that the costs bear a reasonable relationship to the benefits.

Staff review of the available data results in the following conclusions: 1) lead exposure from burning candles with metal-cored wicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks presents a risk of lead poisoning under certain conditions of use; 2) no suitable voluntary standard currently exists and past experience indicates that voluntary industry agreements to ban lead in candlewicks are unlikely to be effective over time; 3) substitutes for lead-cored wicks are available and currently in use; and 4) the costs of a ban would be small. In addition, the candle industry supports a ban on lead-cored wicks.

Tab C contains information from the Office of Compliance.

The Office of the General Counsel has prepared a draft final rule (Tab D) under the Federal Hazardous Substances Act that 1) declare metal-cored candlewicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks to be "hazardous substances," and 2) ban such candlewicks and candles. The draft final rule would become effective 180 days after publication. This should not present an unreasonable burden to the industry since substitutes for lead-cored wicks are widely available and currently in use.

TAB A

UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

Date: March 10, 2003

TO : Kristina Hatlelid, Project Manager, Lead Candlewicks

THROUGH: Warren J. Prunella, AED/EC CBR for WJP

FROM : Mary F. Donaldson, EC

SUBJECT : Final Regulatory Analysis of a Ban of Lead in Candlewicks

Assuming the Commission issues a Ban of Lead in Candlewicks, the Directorate for Economic Analysis has prepared the attached Final Regulatory Analysis.

Attachment

Final Regulatory Analysis of a Ban of Lead in Candlewicks

Introduction

In June 2002, the Commission published a Notice of Proposed Rulemaking (NPR) to ban candlewicks containing lead and candles containing such wicks. Six comments were received in response to the notice.

The Commission is now issuing a final rule that bans metal-cored candlewicks containing more than 0.06 percent lead and candles containing such wicks. It requires that all shipping containers for such wicks and candles be labeled as to conformance. The rule is being issued under the Federal Hazardous Substances Act (FHSA). When the Commission publishes a final rule under the FHSA, it must also publish a final regulatory analysis that includes:

- a description of the potential benefits and potential costs of the regulation, including any benefits or costs that cannot be quantified in monetary terms, and an identification of those likely to receive the benefits and bear the costs;

- a discussion of reasonable alternatives to the regulation, including voluntary standards, and a brief explanation of why such alternatives should not be published as a regulation; and

- a summary of any significant issues raised by the comments submitted during the public comment period in response to the preliminary regulatory analysis and a summary of the assessment by the Commission of the issues raised.

In addition to the requirements of the FHSA, the Commission is required by the Regulatory Flexibility Act of 1980 to consider the possible effects of the rule on small businesses. It is also required by the National Environmental Policy Act of 1969 to consider the potential environmental impact of the rule.

This report presents a summary description of the market for candles and candlewicks, the final regulatory analysis, and a discussion of the likely effects of the rule on small businesses and the environment.

The Market for Candles and Candlewicks

The Candle Market

Candles are made from paraffin wax, beeswax, or gelled mineral oil to which a wick is added. The major types of candles[1] are: *filled, freestanding, taper, tealight and votive.* Filled candles are fabricated and burned in glass, ceramic or other non-flammable containers. Freestanding candles are rigid, self-supporting candles that are designed to be used on non-flammable surfaces. Taper candles are slender and are used on non-flammable candleholders. Tealight candles are small filled candles usually produced in a small metal cup. Votive candles are small candles for use in a votive holder.

Within the United States, there are hundreds of candle manufacturers. The National Candle Association (NCA) indicates that there are "more than 300 known commercial, religious and institutional manufacturers of candles in the United States, as well as many small craft producers for local, non-commercial use." The ReferenceUSA database of US manufacturers lists 483 companies as "candle manufacturers."

Most of these manufacturers are small businesses. Of the 483 firms identified as candle manufacturers by ReferenceUSA, all but three firms had fewer than 500 employees, the US Small Business Administration's threshold for defining a candle manufacturer as small. Most firms were much smaller than the threshold limit. In fact, 293 (or 60 percent) had fewer than 5 employees. Since start up expenses can be low, producers of candles may enter the market easily.

Beginning in the 1990's factory shipments and imports of candles increased dramatically. (see Tables 1 and 2). Between 1992 and 2000, the latest year that factory shipment data are available, US domestic candle shipments rose from $366 million to about $1.5 billion, an increase of over 300 percent. Imports rose at a faster rate than domestic shipments. In 2000, US imports peaked at $504 million, an increase of over 800 percent since 1992. Candles from the Far East accounted for almost half of the imports, while imports from the Americas, mostly Canada, Guatemala, Mexico and El Salvador accounted for a little more than one third. European countries and Great Britain made up less than 10 percent of imports (see Table 3).

US exports of candles amounted to about $60.5 million in 2001. (See Tables 2 and 4.) This represents an increase of more than 500 percent since 1992 when candle exports were about $10 million. Most US candle exports go to Canada. In 2001, Canada received 67 percent of all US candle exports, or $40.8 million of candle shipments. The only other countries receiving more than $1 million value of US candles in 2001 were the United Kingdom, Mexico, and The Netherlands.

The apparent US consumption of candles, defined as domestic shipments plus imports and minus exports, was about $2.0 billion, in 2000, the most recent year for which domestic shipments are available.

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[1] Based on information in *Standard Guide for Terminology Relating to Candles and Associated Accessory Items, ASTM, Designation F1972-99*, ASTM.

Candles are marketed to consumers and to commercial and institutional establishments such as restaurants and religious organizations. They are sold through grocery, discount, and department stores, mass merchandise retailers, specialty and gift shops, craft stores, catalogs, the Internet, and through direct sales at in-home shows. In recent years, several chains of candle stores have become established nationwide. They include Illuminations, Yankee Candle and White Barn Candle Company (1). Retail prices of candles range from about 10 cents for a small tealight candle up to $75.00 for large columnar candles (2,3).

There are limited data available concerning use of candles in homes. According to the NCA, candles are used in seventy percent of US households. The majority of candle consumers burns them one to three times a week. Half of the consumers burn one or two candles at a time (3).

Several trends have contributed to the current year-round popularity of candles and the subsequent decline in the historically strong seasonality of candle sales. One is the increasing popularity of using candles to scent the home. According to a recent article in *Forbes*, scented candles currently represent 72 percent of industry sales (4). In 1992, 40 million scented candles were sold. By 1997, sales of scented candles increased to about 700 million (1).

The Candlewick Market

A candlewick is "a cord or strand of loosely woven, twisted or braided fibers...that draws up fuel to the flame by capillary action" (5). Manufactured candlewicks are predominantly braided and are made with industrial braiding machines. These machines are also used to produce other narrow fabrics such as rope, window cords, and braided trims.

There are three general types of candlewicks. The first, which makes up about 50 percent of US wick production, is the *flat braided* wick. Typically made of cotton fiber, flat braided wicks are used in taper candles.

A second type of wick is the *square* wick, representing less than 10 percent of US production. This type of wick, also made of fiber such as cotton, is used by manufacturers of beeswax candles and candles that develop small wax pools when burning (6).

A third type of candlewick is the *cored* wick, which may account for about 40 percent of wicks used in candles. Cored wicks are rigid and have a central core made of cotton, paper, hemp, metal or sometimes polypropylene. The cores are surrounded by wicking material made of paper or fiber. The central cores provide necessary rigidity to wicks in candles that produce deep pools of molten wax. These are frequently used in votives, pillars, tealights and other container candles (6, 7).

A representative of a candlewick producer indicated that metal is not necessary to provide rigidity to wicks and that the industry is moving away from metal-cored wicks in favor of all natural fiber wicks that use cotton, hemp and paper in the cores. However, when wires are used in candlewick cores, they have been typically made of zinc, tin or lead.

Prior to the granting of the original petition by the Commission, candlewicks with some levels of detectable lead were found in the marketplace. In a non-statistical survey of candles for sale in the Washington, D.C. area in 1999, the Petitioners found that about 30% of candles for sale had metal-cored wicks. About 10 % of the metal-cored wicks (or 3% of all candles) had detectable levels (i.e., at least trace levels) of lead in the wick (See Petition HP-00-3).

According to the NCA, "use of lead cored wicks among US manufacturers is negligible." Practically all metal-cored wicks currently produced in the US are made of zinc. According to the NCA, zinc cored wicks account for about 15 to 20 percent of US production. Zinc cored wicks have trace amounts of lead that average about 0.01 percent lead, substantially less than the lead limit of the rule standard. Tin cored wicks, which were discontinued in 2000, averaged about 0.08 percent lead. (Tin cored wicks, prior to being taken out of production, accounted for less than 1 percent of domestic production.)

Three domestic producers of candlewicks have been identified. The leading producer, Atkins and Pearce, Inc. accounts for the majority of candlewicks used by the US candle industry. In addition, there may be several small specialty producers of candlewicks. Three foreign wick producers were prior members of the NCA; two are based in Germany and one in Brazil (8).

Candlewick manufacturers sell their products to either wholesalers (candle material suppliers) or large candle manufacturers. Wholesalers may supply candlewicks to smaller candle manufacturers or to retailers. Some wholesale candlewick suppliers reconfigure and repackage candlewicks supplied by large producers. This may include cutting the wicking and adding metal tabs to the wicks to aid in the installation of the wick during candle production. The ReferenceUSA database lists 55 wholesale suppliers of candle making supplies and equipment. Small candle producers usually purchase wick material from wholesale firms.

No specific information is available on domestic shipments or sales of candlewicks. Candlewicks are classified as part of the US Bureau of the Census' textile category, "narrow fabric mill products." Shipment data for narrow fabric mill products include a large variety of disparate products such as window blind cords, rope and decorative trims. Therefore, reporting shipments would not reveal relevant information.

In its comments to the NPR, the leading candlewick manufacturer indicated that $800,000 represented a "substantial proportion of total domestic metal cored wick sales." As previously mentioned, zinc cored wicks represent an estimated 15 to 20 percent of U.S. production of candlewicks and zinc cored wicks represent essentially all of metal-cored wick sales. If the $800,000 represents 50 to 100 percent of metal-cored wick sales (a substantial portion of wick sales), then metal-cored wick sales may be about $800,000 to $1.6 million per year. Therefore, total domestic sales of candlewicks could be in the range of about $4 to $5 million per year.

Candlewicks may be purchased by consumers at retail craft stores in small quantities. In large quantities, they may be purchased from wholesale firms or direct from the manufacturers. Candlewicks are available on reels or precut to desired lengths. Prices vary depending upon how the wick is supplied and the quantities ordered. For example, based on one manufacturer's list

prices, pre-waxed wicks on reels were 12 cents per yard and pre-waxed, pre-cut, 2-inch wicks were 37 cents per yard. For this manufacturer, the price did not depend on wick type.

Information on international trade of "textile wicks, woven, plaited or knitted, for lamps, stoves, lighters, candles, etc." is reported under SITC code 65772. Tables 5 & 6 (see appendix) provide information on the value of imports, exports and origin of imports of textile wicks. Total customs value for 2001 was about $4.1 million. The primary countries of origin, representing 80 percent of imports were: Mexico, Germany, Malta & Gozo, India, and the United Kingdom.

Trade Associations

The major trade association, which represents candle and wick manufacturers and suppliers, is the *National Candle Association (NCA)*. NCA members include about 74 candle manufacturers, ten of which are foreign, and three domestic candlewick suppliers, including Atkins and Pearce, the major wick manufacturer. NCA states that its members produce about 90 percent of the candles made in the US. Another US based organization, comprised of craftspersons, is *The International Guild of Candle Artisans*, with about 800 members from around the world.

Costs of the Rule

The rule bans all metal candlewicks with more than 0.06 percent lead and candles with such wicks. All shipping containers of candles and candlewicks bearing metal cores are required to bear a label with the conformance statement, "Conforms to 16 CFR 1500.17(a)(13)."

The costs associated with replacing leaded candlewicks with non-leaded wicks are expected to be negligible, for two reasons. First, the current use of lead in candlewicks is already small, given that none of the NCA members use lead in their candlewicks beyond the acceptable trace levels found in zinc wicks. Second, information obtained from the industry indicates that the cost of substitutes for leaded candlewicks is not higher than candlewicks made with lead. In fact, when lead candlewicks were available they cost more per yard than candlewicks made of other materials. This is because lead is a heavier material than substitutes such as zinc or cotton and candlewicks are sold by the pound.

There may be costs associated with labeling and ensuring conformance. When a label is required, the method used may be either through direct printing onto the shipping carton, or by the attachment of a pre-printed label (e.g. a sticker). On a per container basis, direct printing onto the carton may be less costly than the attachment of a stick-on label. A stick-on label, however, may be less costly overall, if it is used only when needed. If a labeling machine is needed, these may cost as much as $15,000, according to a firm specializing in labeling machines for the candle industry. Individual labels may cost about 5 to 10 cents each.

Labeling costs are likely to be low and an estimate can be made of the number of boxes of candles that might be affected by a labeling requirement. If we assume that $300 to $400 million in candle shipments are affected, or 15 to 20 percent of all candles produced, and that

each shipping container holds 144 candles (i.e., 12 boxes of a dozen candles) valued at $1 per candle, perhaps 2 to 3 million shipping containers would need to be labeled annually. If a label's cost (not including the initial purchase of the labeling machine) is 5 to 10 cents each, then annual costs would be between $100,000 to $300,000 for labeling of candles.

The costs to label candlewick shipments are expected to be substantially less than that of candles. If, for example, each candlewick shipment represents about $500 of metal-cored wicks, then there may be anywhere from 1,600 to 3,200 boxes of candlewicks subject to this rule that are shipped annually. This would result in estimated total labeling costs to candlewick manufacturers of $80 to $320 per year.

While no testing of candlewicks is specifically required by the rule, it is anticipated that some firms using metal candlewicks may want to test their product or obtain assurances from suppliers. Obtaining assurances from candlewick suppliers should be relatively straightforward because candlewick manufacturers generally receive chemical analyses from the metal wire suppliers of the metal used in their candlewicks.

Finally, there might be some costs associated with the scrapping of inventories of non-complying candlewicks held by candle manufacturers. The rule would apply to candles (and candlewicks) manufactured after the rule's effective date. Although non-complying candlewicks may have been manufactured prior to the effective date, they would not be usable in candles manufactured after the effective date. It is not anticipated, however, that a large amount of candlewick inventory will be affected, since all the known domestic candlewick suppliers already meet the lead limits of the rule.

One possible impact of the rule would be the movement away from the use of metal-cored wicks by candle manufacturers due to the added task of labeling of shipments of candles with metal cores and ensuring compliance with the regulation. In discussions with several candle manufacturers, this has already started to occur. Candle manufacturers desiring to eliminate metal-cored wicks would have to perform "trial and error" product testing to find a suitable substitute wick for the candle design. The cost of the substitute wick material will not likely be a significant factor in the decision to change wicks because candlewicks are very low cost items that do not vary much by type. It would therefore be a decision that each firm would make, based on compliance cost and performance factors, as to whether they would continue to use metal-cored wick material in their candles.

In summary, it is anticipated that the overall costs of the rule would be small. Suppliers may have to bear costs associated with the initial implementation of the rule. Because these initial costs will not be uniform across the industry, they may not be passed on to consumers. (A firm which experiences higher costs than another may not be able to pass those costs on in the form of higher prices, because it must compete with firms making similar products at lower costs.) Over time, however, ongoing costs associated with compliance (i.e. labeling and ensuring compliance) will likely be passed on to consumers.

Benefits of the Rule

While the benefits to consumers of eliminating lead candlewicks as a source of lead exposure are not quantifiable, they are likely to be small since few candlewicks with lead are currently produced and/or sold in the US. However, because the likely benefits are dependent on individual circumstances[2], and because there is no "safe" blood lead level, such a ban may result in some positive health benefits in some individual cases. Additionally, in the mid-1970's, the Commission chose to defer to the industry's voluntary agreement to eliminate lead from candlewicks. Since this agreement did not prevent companies from returning to the use of lead-cored wicks in the 1980s and 1990s, a ban of the use of lead in candlewicks will therefore help ensure that lead will not be used in candlewicks in the future.

In summary, while the benefits of a ban of lead in candlewicks are likely to be small, the costs of the ban are also small. The action will, however, contribute to the gradual reduction in sources of lead exposure to the US population.

Effective Date

The rule's effective date is 180 days after publication of the final rule in the Federal Register. It applies to candles and candlewicks with metal cores imported or manufactured after the effective date. It provides time for manufacturers, distributors, and importers to make the necessary changes to bring their products and shipping containers into compliance with the regulation. This would involve the procurement of complying products, including labels and/or labeled containers and/or the implementation of a labeling system for shipping containers. The 180-day time lag also allows for the depletion of any non-complying inventory.

Alternatives to the Regulation

Alternatives to the regulation considered by the Commission include: taking no action, relying on voluntary standards, relying on a ban without labeling of shipping containers, and relying on a warning label.

No Action

If the Commission took no action, metal-cored candlewicks with lead in excess of 0.06 percent by weight in the metal could be sold in the US. In the mid-1970's the domestic candle industry stopped using lead in candlewicks, but lead wicks reappeared on the domestic market some time afterward. While the domestic industry voluntarily eliminated lead in their candlewicks, imports might continue to be a source of lead in the absence of a standard.

[2] Several laboratory studies indicate that there is a risk of lead poisoning from burning lead cored wick candles under certain conditions (9).

Voluntary Standards

As an alternative to a ban of lead in candlewicks, the Commission could defer to a voluntary standard, if one existed. At the time of the ANPR, ASTM was in the process of developing a voluntary standard that would have eliminated the use of lead in candlewicks. However, this voluntary standard effort was terminated. According to the NCA, the voluntary standard effort was stopped because NCA members preferred the development of a mandatory rule to address this hazard. The NCA argued that a "voluntary standard would be ineffective and potentially counterproductive..." due to the level of imports from countries where lead cored wicks are "thought to still be widely used..." Thus, there is currently no voluntary standard to which to defer.

A Ban without Labeling of Shipping Containers

The Commission could decide to promulgate a regulation, which would ban metal-cored candlewicks containing more than 0.06 percent lead by weight in the metal and candles with such wicks. Such a ban would not have to require a label on containers that indicates that the candles and candlewicks meet the requirements of the rule. While this alternative would eliminate the costs associated with the labeling, it could result in difficulties with assuring compliance with the rule. A label with a visible conformance statement on shipping containers would serve as an indication to retailers, wholesalers, importers, manufacturers and government inspectors that the merchandise is compliant (or at least an indication that the seller is aware of the regulatory requirements for candles and their wicks).

Warning Labels

The Commission could require a warning label on candles, advising consumers to use candles with lead wicks only for decorative purposes. However, according to CPSC's Division of Human Factors staff, such a label would likely be ineffective since it would advise consumers not to use candles for their intended purpose. Moreover, if such a warning label were affixed to candle and wick packages, the labels would no longer be present after candles are removed from the packaging.

Summary of Significant Economic Issues Raised during the Public Comment Period

The Commission published the Notice of Proposed Rulemaking in the Federal Register and sought comments on the Preliminary Regulatory Analysis. Specifically, the Commission sought comments regarding the likely effects on small businesses of the testing, recordkeeping, and shipping container labeling requirements that had been proposed.

In response to the NPR, the Commission received comments from the National Candle Association and Adkins and Pearce, Inc. related to the economic impact of the proposed rule. The National Candle Association (NCA) supports the ban on metal wicks containing more than 0.06 percent lead. However NCA did not support the tracking, labeling and recordkeeping

requirements of the proposal.[3] NCA specifically objected to the "complex traceability required of the wick throughout the manufacturing process" and the labeling of shipping containers with the tracking information. While not providing alternative estimates themselves, and providing no supporting evidence, NCA indicated that CPSC's estimate of $800,000 annual cost was "underestimated by an order of magnitude" and that the labeling requirements would be an "extreme and burdensome expense." NCA suggests that "the cost burden of this rule falls on a relatively small portion of the market." Finally, NCA indicated that small candle manufacturers would be "unduly pressed to comply with the record keeping aspect." NCA suggested that CPSC consider an alternative to the tracking requirements submitted by Adkins and Pearce, Inc.

Like the NCA, Atkins and Pearce supported the ban of lead candlewicks but objected to the tracking, labeling and recordkeeping aspects of CPSC's proposal, which they indicated would be prohibitively expensive and difficult to implement. They indicated that the $800,000 cost estimate by CPSC was not trivial, represented a large part of cored wick sales, and would make use of zinc wicks prohibitively expensive. The Atkins and Pearce alternative involved the use of tracer yarn in the candlewicks.

After considering the above comments, the staff has decided not to pursue the testing and/or certification, tracking, and recordkeeping requirements of the rule at this time. While the alternative proposed by Atkins and Pearce may have been a viable alternative to the proposal, and would have provided a level of traceability to the candlewicks that does not currently exist, the staff ultimately concluded that the tracking and recordkeeping requirements were too complex and costly to put into effect, relative to the benefits that would be gained by such requirements. Additionally, as discussed below, such requirements would fall largely on small businesses.

Final Regulatory Flexibility and Environmental Analyses

As noted above, in the Notice of Proposed Rulemaking, the Commission proposed to require testing, and/or certification, tracking, a variable labeling of shipping containers (with lot numbers and a regulatory statement), and the maintenance of related records for all candlewicks with metal cores. The preliminary regulatory analysis was published in the Federal Register on 24 April 2002 and comments were solicited.

Most of the costs of the original proposal in the NPR were associated with the certification, tracking and recordkeeping requirements. While these costs were not substantial relative to the $2 billion candle and candlewick markets, public comments suggested that these requirements were complex and burdensome, and that the costs would not be evenly distributed and would fall largely on small businesses. Based on these comments, in combination with the limited benefits expected from the ban, the staff supported the elimination of the tracking and recordkeeping requirements.

[3] In the Notice of Proposed Rulemaking, the Commission's proposal required that manufacturers and importers of metal-cored wicks and candles test and/or maintain records of testing performed by the supplier of the metal-cored wicks or the metal used in the metal cores. It also proposed labeling of each shipping container with the statement ``Conforms to 16 CFR 1500.17(a)(13)" and a lot designation relating to test results for that lot.

Therefore, in its current form, the regulation is not anticipated to have a significant adverse impact on a substantial number of small businesses. Although most firms affected by the rule are small, costs of complying with this rule are expected to be small. Firms affected by the rule include candlewick producers, distributors, and importers; and candle manufacturers, distributors, and importers.

The transition to complying candlewicks is not expected to have an adverse environmental impact, especially since the effective date of the rule enables the firms to substantially deplete existing non-complying inventory. In response to the NPR, no comments were received with respect to an adverse environmental impact. A large portion of the US candle manufacturing sector has already discontinued using lead wick in their candles. US wick manufacturers have stopped producing wicks with more than 0.06 percent lead by weight. It is not expected that a substantial amount of non-complying inventory would be remaining as of the effective date of the rule. Therefore, the environmental consequences are expected to be insignificant.

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7. *Candle Wicking*, Atkins & Pearce, www.braidway.com, March 20, 2000.

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9. Hatlelid, K.M., *Review of Lead Emissions from Candles*, CPSC Memorandum dated November 15, 2000; (Tab B in Briefing Package on Petition No. HP 00-3, December 12, 2000.)

Appendix

Table 1: Domestic Factory Shipments of Candles, 1977-2000.

Year	Value of Shipments (in $ millions)
1977	160.3
1982	257.6
1987	202.1
1992	366.2
1993	421.6
1994	417.8
1995	500.8
1996	556.7
1997	907.7
1998	989.9
1999	1,449.6
2000	1,550.6

Source: US Bureau of the Census

Table 2: Customs Value of Candle Imports, FAS[1] Value of Exports, 1992-2001.

Year	Value of Imports (in millions)	Value of Exports (in millions)
1992	53.2	9.9
1993	67.8	14.2
1994	95.3	21.7
1995	135.7	31.2
1996	197.8	49.9
1997	226.7	66.5
1998	341.6	68.6
1999	484.2	72.6
2000	504.6	68.5
2001	434.7	60.5

[1] *Free alongside ship (FAS) value is the value of exports at the US port.*
Source: United States International Trade Commission

Table 3: Customs Value of Candle Imports, by Country of Origin, 1999-2001 ($ millions.)

Country of Origin	1999	2000	2001
China	131.7	151.7	135.7
Canada	73.7	76.5	74.7
Guatemala	55.7	50.5	36.5
Hong Kong	53.5	46.3	32.2
Mexico	50.9	49.7	34.2
Israel	19.4	23.9	30.2
Thailand	18.4	22.5	16.5
Taiwan	17.5	17.2	14.4
Italy	13.2	13.8	13.3
France	4.6	4.2	4.5
Macao	4.5	5.2	5.3
Germany	4.4	3.1	3.0
United Kingdom	4.4	3.8	1.8
Denmark	4.0	3.5	3.0
Netherlands	3.8	2.2	0.6
Korea	3.5	1.4	1.2
El Salvador	3.3	6.3	6.6
Portugal	2.7	1.2	1.7
India	2.0	2.7	1.8
Philippines	2.0	3.7	2.8
Malaysia	1.7	1.9	3.4
Belgium	1.0	0.8	1.3
Spain	1.0	0.7	1.1
Swaziland	1.0	1.4	0.7
Others	6.3	10.4	8.2
Total	**$484.2**	**$504.6**	**$434.7**

Source: United States International Trade Commission

Table 4: FAS Value of US Candle Exports by Receiving Country, 1999-2001.

Country	1999	2000	2001
Canada	48.5	45.8	40.7
U.K.	8.8	7.4	6.4
Mexico	2.4	4.1	4.1
Netherlands	2.3	3.1	2.8
Germany	1.8	0.6	0.5
Australia	1.5	0.7	0.5
Spain	1.0	0	0.1
All Other Countries[2]	6.3	6.8	5.4
Total	$72.6	$68.5	$60.5

[2] *All other countries receiving less than $1 million in US candle exports*

Source: United States International Trade Commission

Table 5: Customs Value of Textile Wick Imports & FAS Value of Exports, 1992-2001.

Year	Value of Imports (in $ millions)	Value of Exports (in $ millions)
1992	1.4	5.3
1993	1.6	3.6
1994	2.8	3.6
1995	2.8	3.3
1996	3.4	4.0
1997	3.7	3.6
1998	3.0	4.9
1999	3.9	5.4
2000	4.3	7.5
2001	4.1	7.4

Source: United States International Trade Commission

Table 6: Customs Value of Textile Wick Imports, by Country of Origin, 2001.

Country of Origin	Value of Imports
Mexico	1,462
Germany	714
Malta & Gozo	428
India	379
United Kingdom	287
China	172
Taiwan	144
Chile	139
Korea	121
Japan	101
Canada	78
Greece	40
Malaysia	22
Austria	17
Philippines	9
Italy	5
Latvia	4
France	2
Sweden	2
Netherlands	2
Total	$4,127

Source: United States International Trade Commission
Note: Results may not add due to rounding.

TAB B

United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

MEMORANDUM

DATE: July 8, 2002

TO : ESHF

Through: Todd A. Stevenson, Secretary, OS

FROM : Martha A. Kosh, OS

SUBJECT: NPR for Candle Wicks Containing Lead; 67 FR 20062 (April 24, 2002)

ATTACHED ARE COMMENTS ON THE CH-02-2

COMMENT	DATE	SIGNED BY	AFFILIATION
CH 02-2-1	6/16/02	M.R. Chaney	mrchaney@comcast.net
CH 02-2-2	7/08/02	John DiFazio Sr Counsel	Consumer Specialty Products Association 900 17th St, NW, #300 Washington, DC 20006
CH 02-2-3	7/08/02	Bob Nelson President	National Candle Association 1156 15th St, NW Suite 900 Washington, DC 20005
CH 02-2-4 **Rec'd 6/9/02**	7/03/02	Jeb Head	Atkins & Pearce, Inc. One Braid Way Covington, KY 41017
CH 02-2-5	7/12/02	Elizabeth O'Brien Manager	Global Lead Advice and Support Service P.O. Box 161 Summer Hill NSW 2130 AUSTRALIA
CH 02-2-6	7/19/02	Richard McGovern	37 Rockville Ave. State Island, NY 10314